ABSTRACT

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This invention is a method of forming a nitride layer on at least one metal or metal alloy biomedical device, comprising: providing a vacuum chamber with at least one biomedical device positioned thereon on a worktable within the vacuum chamber; reducing the pressure in the vacuum chamber; introducing nitrogen into the vacuum chamber so that the pressure in the vacuum chamber is about 0.01 to about 10 milli-Torr; generating electrons within the vacuum chamber to form positively charged nitrogen ions; providing a negative bias to the worktable so

that the positively charged nitrogen ions contact the biomedical devices under conditions such

that a nitride layer forms on the at least one prosthetic device.

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